

PCAS 16 (2013/2014)

**Supervised Project Report
(ANTA604)**

***Using informal online resources to investigate the impacts and
benefits of adventure tourism on Antarctica***

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Word count: 4047

Abstract:

The last two decades have seen a significant increase in the number of tourists visiting Antarctica. This can be of concern in regards to the environmental and other impacts it may have. This paper looks at adventure tourism, a branch of Antarctic tourism which has also been growing. The definition of adventure tourism is discussed and this paper focuses on land-based organised tourism and land-based independent expeditions. The unique impacts of these activities to the physical, social and political environment are analysed as well as the potential benefits. Although all forms of tourism will have some negative impact on the physical environment, it is concluded that impact caused by adventure tourism is quite minimal. In regards to social/political impacts, adventure tourism, particularly independent expeditions can have a significant impact, both with the disruption to National Antarctic Programs and commercial tour companies, financial burden, and the risk to human lives. It is concluded however, that the benefits outweigh the negative impacts in this case, yet focus still needs to be put on Antarctic tourism to ensure it stays this way.

Introduction

Antarctica is often described as one of the world's last wildernesses. Tourists are attracted to it for many reasons, but especially for its remoteness, spectacular scenery and abundant wildlife. Commercial tourists have been visiting Antarctica since the 1950s. Numbers of tourists have increased substantially since then, and continue to increase. There are a number of different ways in which tourists choose to experience Antarctica. By far the most common way is by expedition cruise, with landings on the sub-Antarctic Islands, Peninsula and/or continent. Most of these ships are out of South America (Ushuaia or Punta Arenas). This 'traditional' way of travelling in Antarctica is now complimented by other options such as cruise only tours (without landing), small yacht tours, fly-sail options, fly-in land-based tours, and over-flights (without landing) (Lamers *et al.* 2008). There are also tourists who choose to travel independently who may travel by private yacht or may fly to the Peninsula or continent and partake in independent activities from there (including ski-expeditions to the South Pole).

Figure 1 shows the number of tourists travelling to Antarctica each austral summer season from 1992 to 2013. There has been rapid growth in the industry with numbers of tourists increasing from a few thousand in the early 1990s to over 45,000 in 2007/2008. This rapid growth was halted after the 2007/2008 season due to the global economic crisis (IAATO 2009) and the following decrease at 2001/2012 is due to a change made by the International Maritime Organization, banning the use and carriage of heavy fuel oil in the Antarctic Treaty area. This reduced the number of large vessels (cruise-only vessels carrying more than 500 passengers) operating in the area (IAATO 2012). These figures are sourced from the International Association of Antarctica Tour Operators (IAATO) and are only tourists travelling with IAATO operators. The numbers travelling with non-IAATO operators is not well known. IAATO estimates the number of tourists for the 2013/2014 season to be around 35,354, an increase of 3%. Despite some decreases in the last decade, the number of tourists visiting Antarctica is, overall, growing quickly.

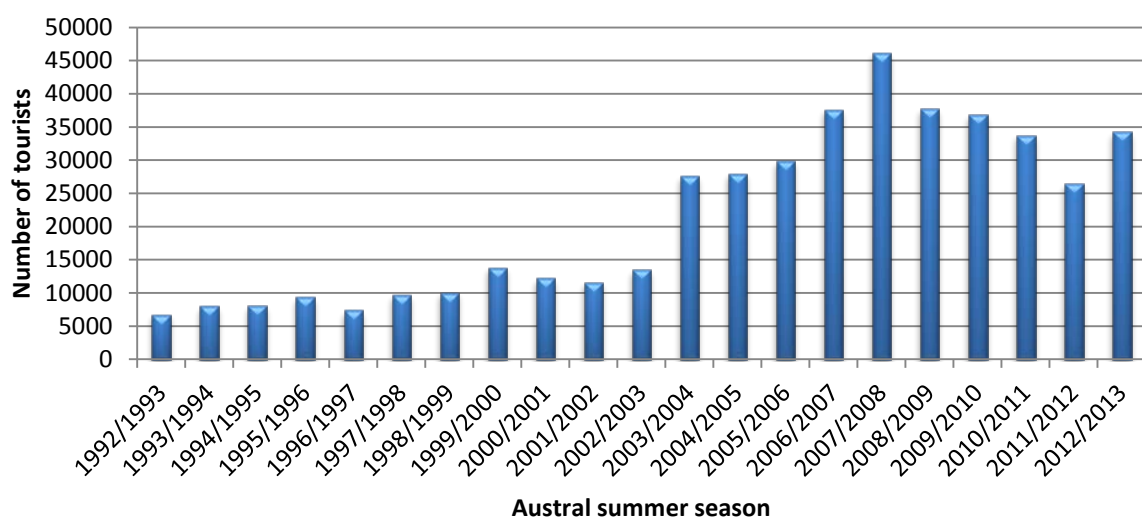


Figure 1: Number of ship and land-based passengers travelling to Antarctica with IAATO operators for each austral summer season since 1992. From 1997/1998 onwards it includes commercial yacht activity and from 2002/2003 onwards it includes airborne passengers making landings (sourced from IAATO Information Papers).

Adventure tourism

As well as the number of tourists visiting Antarctica being on the increase, the diversity of tourist activities in Antarctica is also increasing. Pursuits such as ski-expeditions, mountain climbing, marathons, long-distance swimming and scuba diving are all available and becoming more popular (Bastmeijer 2003). These types of activities are often defined as 'adventure tourism'. It is difficult to find a universally accepted definition of what a tourist is (Murray & Jabour 2004), and certainly, 'adventure tourism' has never been clearly defined (IAATO 2003). Some do not class independent expeditions within the 'adventure tourism' category (Murray & Jabour 2004), instead only include those travelling with organised tours. Some include yacht-based tourists, some do not. Different authors have their own definitions. Gildea (2007) defines adventure tourism as "those activities conducted by non-government parties – either commercially or non-commercially - for the purposes of physical recreation, exploration, competition, private scientific research, or a combination of any of these".

Many yachts and small and medium-sized ships, who previously were just offering landings of short duration for wildlife viewing and short walks, now offer additional activities such as scuba-diving, mountain climbing and skiing. One example is Ice Axe Expeditions, who specialise in skiing, snowboarding and trekking in the Antarctic Peninsula (Ice Axe Expeditions 2014). Although they are ship-based, they come ashore most days to partake in these activities. There are also several land-based companies that offer adventure activities. Generally the ship-based adventure activities will use the same landing sites as non-adventure activities, and will use existing facilities, therefore land-based companies and independent land-based expeditioners will potentially have quite different impacts to ship-based tourism. For this reason, although it could reasonably be argued that ship- or yacht-based commercial operators specialising in more active pursuits (such as Ice Axe Expeditions, mentioned previously), could reasonably be classed as adventure tourism, this paper will focus primarily on land-based tourists travelling with commercial operators, and also independent land-based expeditions.

Adventure tourism accounts for a very small portion of the total number of tourists visiting Antarctica each year. IAATO (2013) estimates land-based tourism to be around 1% of the total, with 34,354 total Antarctic visitors compared to 354 land-based tourists in the 2012/2013 season.

Land-based commercial tourism

There are currently three IAATO member operators offering land-based tourism options in the interior of Antarctica. These are: Antarctic Logistics and Expeditions (ALE), who purchased pioneering commercial Antarctic tour-operator Adventure Network International (ANI); The Antarctic Company (TAC); and White Desert (IAATO 2013). In 1985 ANI/ALE became the first company in the world to offer flights to the interior of Antarctica and they

are now the largest operator of land-based tourism in Antarctica (ANI 2014). Figure 2 shows the number of tourists travelling with ANI/ALE each season. It also shows the figures available for TAC and White Desert. TAC and White Desert both joined IAATO in 2009 (TAC 2011; White Desert 2014) so the number of clients they carried before this is unknown. Although no trend is seen in the numbers of tourists travelling with TAC and White Desert (presumably due to the limited data), there is a clear steady increase in ANI/ALE client numbers.

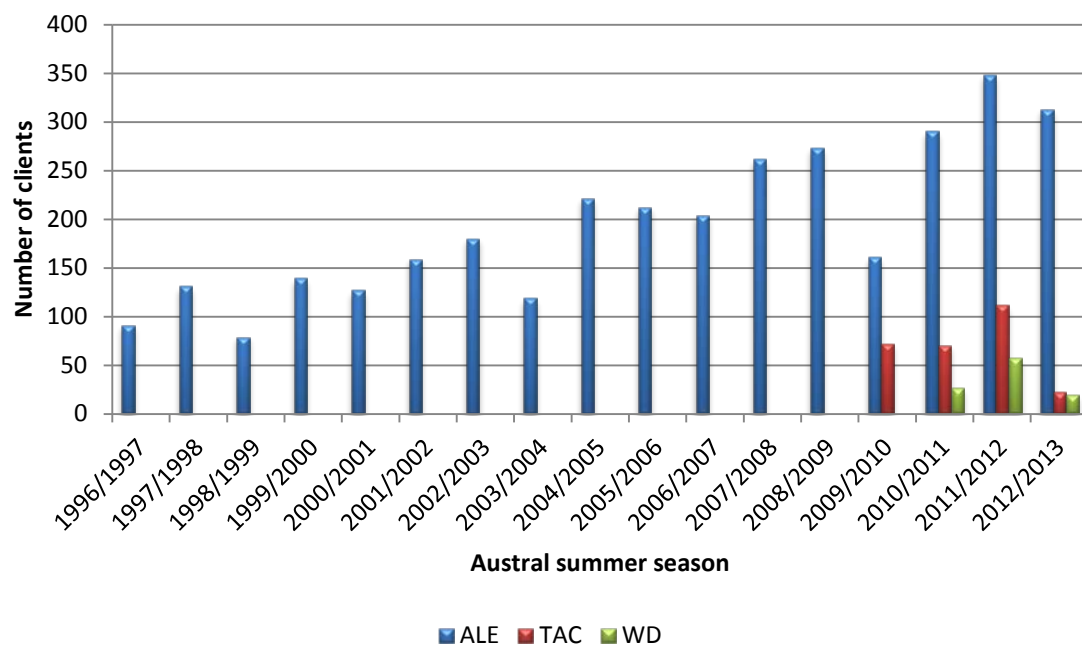


Figure 2: Number of tourists travelling with IAATO member land-based companies for each austral summer season since 1996 (sourced from IAATO Information Papers).

It must be noted that the number of on-ground staff and crew associated with these land-based operations are not reflected in the figures, yet these need to be taken into account when considering the impacts on the Antarctic environment.

These land-based operators have their own camps in the Antarctic interior. They fly in either from Punta Arenas (ANI/ALE) or from Cape Town (TAC & WD). They operate a variety of tours including emperor penguin watching, skiing, traverses to the South Pole, mountain climbing and scenic flights (ANI 2014; TAC 2011; White Desert 2014). ANI/ALE and TAC also provide flight and logistic support to National Antarctic Programs (NAPs) and to many independent expeditions (ANI 2014; TAC 2011).

Independent expeditions

Every year there are adventurers setting out on the Antarctic continent with their aim to reach the South Pole or indeed reach the other side of the continent via the South Pole. Many modes of transport are used including skis, four wheel drive vehicles, bicycles and tricycles. Other expeditions include flights across the continent and mountain climbing. Independent expeditions are usually self-funded or backed by private sponsors. Often they have the support of a land-based tourism company or a National Antarctic Program (NAP). ANI/ALE are hired by many expeditioners to provide their logistical support, including their transfer to and from the continent and their back-up in the event that rescue is required.

Regulations

With the rapid development of tourism over the last two decades and the expanding variety of activities available to tourists, tourism management is becoming an increasingly important issue (Lamers *et al.* 2008). Difficulties in the management of tourism in Antarctica also arise due to the lack of any State with official sovereignty over it. The lack of official sovereignty led to the creation of the Antarctic Treaty in 1959, through which human activities in Antarctica are collectively governed. Although there is no mention of tourism in the Antarctic Treaty, a recent and significant addition to the Antarctic Treaty System (ATS), which added an element of environmental protection, was the 1991 Protocol on Environmental Protection to the Antarctic Treaty (Madrid Protocol) (Lamers *et al.* 2012). This sets forth a range of obligations and prohibitions applicable to human activities, including tourism, in Antarctica (Lamers *et al.* 2012).

The tourism industry itself has been left largely self-regulated. In response to this, the International Association of Antarctica Tour Operators (IAATO) was formed in 1991. Its membership currently includes more than 100 Antarctica-bound companies and organisations (IAATO 2014) and its objective is to “advocate, promote and practice safe and environmentally responsible private-sector travel to the Antarctic” (IAATO 2014). The majority of all known Antarctic tour operators are members of IAATO (IAATO 2013). In the 2005/2006 season 95% were members (IAATO 2006a) and although the current figure is unknown, it is still a large percentage (IAATO 2013).

Members of IAATO subscribe to the principle that their planned activities will have no more than a minor or transitory impact on the Antarctic environment (IAATO 2006b). As a member of IAATO, TAC’s operations (as with most other IAATO member operations) are carried out in accordance with the Antarctic Treaty, the Environmental Protocol to the Antarctic Treaty and related agreements (TAC 2011).

Environmental impacts

Wherever humans go, there is the potential for them to have an impact on the natural environment. Humans have always been changing the environment around them, be it through removal of vegetation, the killing of animals, introduction of non-native species or the deposition of wastes – among many others. Despite its remoteness and its almost complete cover of ice and snow, Antarctica is not immune to this. In fact, it is perhaps due to these factors that the Antarctic environment is unique and fragile. From the time ships first entered Antarctic waters, changes were made to the natural environment. In recent times attitudes have changed in regards to protection of the Antarctic environment. Early last century little regard was given to the natural environment. Wastes were dumped into the oceans and on the land, most species of wildlife were hunted, some to the brink of extinction, and non-native animals and plants were introduced to the continent. Since the Antarctic Treaty came into force, followed by the Environmental Protocol to the Antarctic Treaty, and then the establishment of tourism regulator IAATO, there are now quite strict rules in place that govern human activities in the Antarctic Treaty area. Guidelines include the treatment of wildlife, the management and removal of wastes and the management of non-native species.

Land-based organised tours can have similar environmental impacts to those of mainstream tours. By landing on the continent there is automatically a risk of introducing non-native species, and the trampling or damage to fauna. Due to their location on the interior of the continent it is possible land-based tourists could have less impacts than those visiting the coasts. The climate and conditions inland do not harbour an appropriate environment for many floral species to live, being colder and predominantly ice and snow covered. Hence these locations would be less susceptible than those in coastal areas. A more likely impact from land-based tourism would be the existence of infrastructure (if only temporary), the potential for fuel spills and the waste created by people spending extended periods of time in one place. The three IAATO member land-based operators endeavour to have as little impact on the physical environment as possible. As with TAC and White Desert, the tents at the camps of ANI/ALE are dismantled at the end of each season. Renewable power is used at all camps and all wastes are removed. White Desert prides itself on having “zero impact”. It is a temporary camp, so all structures and all wastes are removed and all its power comes from renewable sources. It is also an accredited carbon-neutral company (White Desert 2014).

A current concern amongst Antarctic Treaty Consultative Parties (ATCPs) is the potential future development of permanent land-based facilities for tourism. Recent debates amongst the ATCPs is whether additional measures are needed to regulate or prohibit this development (Bastmeijer *et al.* 2008) However as stated in IAATO (2006b), none of the existing IAATO members are currently interested in promoting or funding the construction of major facilities in Antarctica, such as “hotel” accommodation.

The threat independent expeditions pose to the environment is incredibly small compared to that posed by NAPs and mainstream tourism (Murray & Jabour 2004). It is more likely that they will cause other impacts such as social and political (this is discussed later in the paper). As independent expeditions are usually made up of one or a small number of people, their potential to have a negative impact on the environment is likely to be less. Although no evidence was found of this, it is presumed that many independent expeditioners leave waste behind on their journeys, both general rubbish and human wastes. This would be particularly true for expeditioners on foot who are carrying or pulling their own food, fuel and equipment. The weight of a sled can determine the speed and distance an expeditioner covers, and can have an impact on how much food they can carry and hence on their health. There would also be the risk of fuel spills, minor in the case of human powered expeditions and to a greater extent if vehicles are used. These potential impacts, given the very small number of people who partake in independent expeditions each year, would presumably be very small compared to impacts from land-based operations and indeed from mainstream tourism.

Social/political impacts

Not only can tourism have a negative effect on the physical environment of Antarctica, it can also have an effect on the social and/or political environment. This is particularly true for independent travellers, those who travel solo or in small groups and are not under the 'supervision' of a commercial operator. Independent expeditioners are acknowledged to generally pose low environmental risks to the environment (Murray & Jabour 2004) but their potential impacts in other ways can be higher than those of mainstream tourists. In particular it is the disruption to NAPs and commercial tour operators, and costs that may be incurred by them, that is of most concern. Participating in search and rescue and housing, feeding and transporting expeditioners are some of the ways NAPs and commercial tour operators may be burdened, both financially and with regards to lost productivity. Often many independent expeditions are either not well enough prepared – for example without a back-up or rescue plan – or they have not informed any relevant NAPs or tour companies of their plans (Murray & Jabour 2004).

Some examples of independent expeditions that went wrong and required assistance are discussed below:

Rolf Bae and Erik Sonneland

In 1999 Norwegians Rolf Bae and Erik Sonneland crossed the Antarctic continent. They landed at Ross Island with very little food. They were fed and accommodated at New Zealand's Scott Base until they were able to leave on a tourist ship. According to Murray &

Jabour (2004) they made no indication that they would be crossing the continent, only that they would be heading for the South Pole. Outside Magazine (2001) expressed concern that the adventurers had no established plans for getting out of the South Pole and it was suggested they would need to “throw themselves at the mercy of the NSF (National Science Foundation) whose official policy is to offer visitors a cup of coffee... or somehow come up with \$50,000 to get the NSF to fly them out”.

Peter Bland

Australian Peter Bland was caught in an avalanche while climbing on the Antarctic Peninsula and sustained a suspected broken back and many other serious injuries. The combined efforts of his support yacht, a tourist ship and the Chilean national program led to his rescue. According to Murray & Jabour (2004), the expedition had been discouraged by the Australian Antarctic Division. Although Bland offered to repay the Chilean national program (Stateline Tasmania 2011) there was inevitably some disruption caused to both the NAP and the tourist ship involved in the rescue.

Russian tourists

In 2001, 14 Russian tourists and officials were stranded at the South Pole when their plane would not start. They were housed and fed for two days at Amundsen-Scott Station before they were able to fly out (Murray & Jabour 2004).

Norwegian snowmobilers

In 1993 four Norwegians planned a snowmobile expedition to collect the tent and flag left by Roald Amundsen after his journey to the South Pole in 1911. The four expeditioners fell into a crevasse and unfortunately one of them lost their life. According to The New York Times (2013), a team of Americans and New Zealanders were flown to the South Pole and then flown by twin otter to the scene. The rescue took many hours and involved high levels of risk for the rescuers. NSF billed the Norwegian expedition more than \$100,000 (The New York Times 2013).

The above stories are just a few of many examples where independent expeditioners have had to rely on NAPs or other outside entities for help in search and rescue or in the provision of food and shelter. Although in some cases (such as that of the Norwegian expedition) the apparent financial loss is recuperated, it still takes time out of science programs commercial tour operations and also puts other lives at risk.

It appears adventurers will continue to travel to Antarctica despite the risks their individual expeditions may incur, even to the point where some have suggested that they should be allowed to sign a ‘Right to Die’ contract. This would state that they will not ask for help if they need it and if communications are lost, a search party should not be sent out (Stateline Tasmania 2011). Supporters of this idea believe it would be a solution to the possible refusal

by a NAP of an expedition that had a certain level of perceived risk. However, despite this the NAPs and tour industries would likely feel an obligation to render assistance, and would find themselves in a situation where they would need to just write the costs off (Murray & Jabour). For this reason, many NAPs are now seeking regulations requiring expeditions to guarantee repayment or discouraging them from proceeding in the first place (Murray & Jabour).

Benefits of adventure tourism

The negative impacts of tourism often have much focus put on them, whereas the benefits are in comparison seldom visited. Some benefits that can result from adventure tourism is the creation of Antarctic 'ambassadors', increased awareness of Antarctica and its related issues and raised funds and awareness for charities. All visitors to Antarctica, be it through adventure tourism, mainstream tourism, science or field work, have the potential to become Antarctic ambassadors. A quote from TAC (2011) sums up the benefits of the creation of ambassadors *"We strongly believe that you have to know, respect and love something in order to protect it. In sharing impressions, pictures and movies from this beautiful, white continent, every visitor to Antarctica can act as an ambassador promoting the necessity to protect this unique environment and keep it in its pristine state"*.

Ambassadorship is the overriding benefit of those travelling with established tour companies. Independent expeditions however, often have another benefit. Many expeditions are involved with charities, raising money and awareness for various causes. The following are examples of such expeditions:

Walking with the Wounded

Prince Harry and a team of people from the UK, US, Australia and Canada skied to the South Pole to raise awareness and funds for charity 'Walking with the Wounded'. Through this charity, money is raised towards training wounded, injured and sick soldiers, assisting them to find a career outside of the military (Walking With The Wounded 2014).

Pink Polar Expedition

Australian Geoff Wilson, as part of the 'Pink Polar Expedition' skied to the South Pole to raise money for the McGrath Foundation, a breast cancer support and education charity. So far the expedition has raised \$229,649 (McGrath Foundation 2014).

737 Challenge

Richard Parks skied to the South Pole and climbed Mount Vinson (the highest mountain in Antarctica) as part of his '737 Challenge'. Through this challenge he raises money for the charity Marie Curie Cancer Care. His goal is to raise £1 million (737 Challenge 2009).

Willis Resilience Expedition

In 2013 Patrick Liautaud and his team skied to the South Pole, with the aim of Patrick becoming the youngest male to do so. On the way they conducted scientific research aimed at exploring the impact of climate change (Willis Resilience Expedition 2014).

ETE Teachers

Antony Jinman skied solo to the South Pole for his project Education through Expeditions (ETE) which he established in 2010. Since then ETE has been developing school outreach programs and connecting explorers and scientists with schools with aim of inspiring children and educating them about the world around them (EE Teachers 2013).

IAATO vs non-IAATO

When looking at the experiences of adventure tourists and their actions and behaviours with regards to the physical environment, there appears to be no evident difference between those travelling with IAATO member operators and those not travelling with IAATO member operators. There was no evidence in the blogs and online resources of any negative behaviour such as inappropriate waste disposal, littering and disturbance of fauna and flora for either group. It is suspected that some long-distance expeditions, such as those travelling to the South Pole or across the Antarctic continent, may leave waste (including human waste) behind, however this would likely be the case for both those travelling completely independently and those backed by an IAATO member operator. Certainly if travelling on an organised tour with an IAATO member there is an expectation that individuals will abide by the strict rules and regulations set by the company with regards to environmental conduct.

Impacts on the social and/or political environment were also looked at in this study, particularly with regards to disruption to NAPs. This is primarily applicable to expeditions rather than itinerary-based tours. Many expeditions are completed without incident, with only a minority needing assistance (Murray & Jabour 2004). Even amongst those who do require assistance, those who are well planned and who have an emergency plan (in most cases this would be through ANI/ALE) are rescued without disturbance to NAPs or other external entities. Several cases of such are described by Murray & Jabour (2004). It may be suggested then that those travelling with the support of an IAATO member operator have little impact. Although details are not available for many expeditions, it can be assumed that those expeditioners that required assistance did not have an adequate backup plan, so were presumably not travelling with the support any operator, IAATO member or not.

Conclusion

The environmental impacts of adventure tourism appear to be quite minimal, certainly in comparison to the impacts of mainstream tourism and national programs (Murray & Jabour 2004). There are always risks to the environment associated with human activity, however these appear to be minimised in Antarctica due to the strict regulations placed on visitors through the Antarctic Treaty, the Environmental Protocol to the Antarctic Treaty and other associated agreements. Tourists travelling with IAATO member operators are certainly expected to abide by these rules and regulations. Despite the low perceived environmental impacts, tourism in Antarctica still needs the focus of decision makers as the increase in tourist numbers can also increase the potential impacts, so tourism is of continuing concern.

When social impacts are taken into account, land-based organised tours appear to have less of an impact than independent expeditions. They do however, also appear to have less benefits than independent expeditions. There is always some benefit though, as all people who have travelled to Antarctica have the potential to become Antarctica 'ambassadors', sharing their experiences with friends and family and inspiring and educating people so that they will feel some concern for the continent and realise the importance of its protection.

Independent expeditions have the potential for some significant social impacts, but they also have some quite substantial benefits, be it through raising money for cancer research, raising awareness of climate change or the plight of injured soldiers, or by the education and inspiration of school children. Taking into account the impacts and benefits it is the opinion of the author that the benefits of adventure tourism in Antarctica outweigh the negative impacts. If regulations continue to be adhered to and perhaps more regulations put in place, it is possible that the impacts can be lessened whilst the benefits are still retained. This could ensure the unique and spectacular place that is Antarctica remains protected at the same time allowing visitors to enjoy and be inspired by its beauty.

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